



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,390	11/08/2001	Hirokazu Kanekiyo	60303.3	5634

7590 03/11/2003

KEATING & BENNETT LLP  
Suite 312  
10400 Eaton Place  
Fairfax, VA 22030

EXAMINER

SHEEHAN, JOHN P

ART UNIT	PAPER NUMBER
----------	--------------

1742

DATE MAILED: 03/11/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/986,390

Applicant(s)

KANEKIYO ET AL.

Examiner

John P. Sheehan

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, & 6-9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1 to 31, drawn to a method of making an iron based rare earth magnet comprising preparing a melt of the alloy, feeding the melt onto a guide surface that defines an angle of about 1 to about 80 degrees with respect to a horizontal plane so as to move the alloy melt onto a chill roller and rapidly cooling the alloy melt to form a solidified alloy comprising the  $R_2Fe_{14}B$  phase, classified in class 164, subclass 423.
  - II. Claims 32 to 37, drawn to a "rapidly solidified iron based rare earth alloy having a thickness of between about 50 microns and about 200 microns, classified in class 148, subclass 302.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process, such as for example, sputtering, chemical vapor deposition, etc..

Art Unit: 1742

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown their different classification and because the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Joseph R. Keating on August 19, 2002 a provisional election was made with traverse to prosecute the invention of Group II, claims 32 to 37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1 to 31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1742

7. Claims 32 to 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yajima et al. (Yajima, US Patent No. 5,049,208, cited by the applicants in the IDS submitted December 17, 2001).

Yajima teaches a rare earth permanent magnet alloy having a composition that overlaps the composition recited in the instant claims (see column 3, lines 8 to 55). Yajima teaches that the alloy has a thickness of 20 to 80 microns (column 9, lines 30 to 35) that it is pulverized to a powder particle size of 30 to 500 microns (column 9, lines 54 to 56). Yajima teaches that the alloy has a grain size of 0.01 to less than 0.3 microns or 10 to less than 300 nm (column 7, lines 45 to 50). Yajima teaches that the alloy contains a main phase of the 2-14-1 tetragonal phase and additional phases including an amorphous phase and a boride phase (column 7, lines 41 to 61), which appear to be the same as recited in instant claims 33 and 34. The alloy thickness, powder size and grain size taught by Yajima all overlap the values recited in the instant claims. Yajima teaches that the disclosed alloy is made by a process of melt spinning which is optionally followed by a heat treatment step. This is the same process disclosed by the applicants to make the instantly claimed alloy and powder (compare Yajima's Examples 1 and 2 in columns 12 and 13 to paragraphs 83 to 85 of the instant application). Yajima teaches that the alloy has coercivity greater than 600 kA/m (7.54 kOe) as recited in claim 37 (see Yajima, columns 13 and 14, Table 3).

The claims and Yajima differ in that Yajima is silent with respect to the crystal structure recited in the last 2 lines of applicants' claims 32 and 34, the recoil

Art Unit: 1742

permeability recited in the last 2 lines of claim 36 and the axis ratio recited in claim 37, lines 15 and 16.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloy taught by Yajima have a composition that overlaps the alloy composition recited in the instant claims and therefore is considered to establish a prima facie case of obviousness, In re Malagari, 182 USPQ 549 and MPEP 2144.05. Further, in view of the fact that Yajima's alloy is made by a process that is similar to, if not the same as, applicants' process of making the instantly claimed alloy, Yajima's alloy would be expected to possess all the same properties as recited in the instant claims, In re Best, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

8. Claims 32 to 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (Ma, US Patent No, 6,332,933, cited by the applicants in the IDS submitted January 3, 2002) taken in view of Yajima et al. (Yajima, US Patent No. 5,049,208, cited by the applicants in the IDS submitted December 17, 2001).

Art Unit: 1742

Ma teaches a nanocomposite rare earth magnetic alloy having a composition that overlaps the alloy composition recited in the instant claims (column 2, line 39 to column 3, line 8). Ma teaches that the alloy has a soft magnetic phase having a grain size of 2 to 60 nm, a hard magnetic phase having a grain size of 10 to 100 nm and a boride component having a grain size of 1 to 30 nm (column 4, lines 3 to 8 and 45 to 52). Ma teaches that the alloy is ground to a powder having a particle size of 10 to 200 microns (column 4, lines 30 to 33). Ma teaches specific example alloys having compositions that are encompassed by the instant claims (column 8, Examples 6 and 7) and having coercivity greater than 600 kA/m (7.54 kOe) as recited in claim 37 (see Ma, column 8, Table 7 and 8, the Ti containing embodiments). Ma teaches that the disclosed alloy is made by a process of melt spinning which is optionally followed by a heat treatment step. This is the same process disclosed by the applicants to make the instantly claimed alloy and powder (compare Ma's Examples 6 and 7 in column 8 to paragraphs 83 to 85 of the instant application).

Yajima teaches that when making rare earth magnet alloys by melt spinning the resulting ribbon generally has a thickness of 20 to 80 microns (column 9, lines 30 to 33).

The claims and Ma differ in that Ma is silent with respect to thickness of the alloy, the crystal structure recited in the last 2 lines of applicants' claims 32 and 34, the recoil permeability recited in the last 2 lines of claim 36 and the axis ratio recited in claim 37, lines 15 and 16.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloy taught by the

Art Unit: 1742

reference has a composition that is encompassed by the instant claims and is made by a process which is similar to, if not the same as, applicants' process of making the instantly claimed alloy. In view of this, the alloy taught by the reference would be expected to possess all the same properties as recited in the instant claims. In re Best, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

With respect to the claimed alloy thickness, it is the Examiner's position that when making a rare earth magnetic alloy by melt spinning the resulting ribbon has a thickness of 20 to 80 microns as taught by Yajima (column 9, lines 30 to 33) and therefore applicants' claimed alloy which is made by melt spinning would be expected to have a similar thickness.

### ***Conclusion***

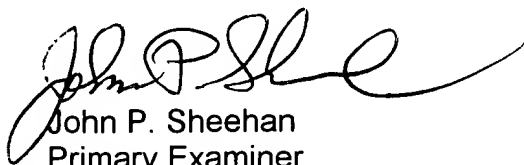
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (703) 308-3861. The examiner can normally be reached on T-F (6:30-5:00) Second Monday Off.



Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



John P. Sheehan  
Primary Examiner  
Art Unit 1742

jps  
March 3, 2003